

SEQUENCE LISTING

<110> AKZO Nobel N.V.

<120> Babesia canis vaccine

<130> Bccvirvaccine

<140>

<141>

<160> 10

<170> PatentIn Ver. 2.1

<210> 1

<211> 1135

<212> DNA

<213> Babesia canis

<220>

<221> CDS

<222> (75)..(500)

<400> 1

gaattcggca cgagccctgc tatactgtgc tttgcaacta actccatcgtaataatttaa 60

tataataata aagg atg gag tcg aca tca aca acg acc aac ttt gtt gcc 110  
Met Glu Ser Thr Ser Thr Thr Asn Phe Val Ala  
1 5 10

gag aac cgt ccc acc ttt ggt gag acg ttt gat gtg atg agg gaa gct 158  
Glu Asn Arg Pro Thr Phe Gly Thr Phe Asp Val Met Arg Glu Ala  
15 20 25

ttg ctt cgt gta aag tcc tct gaa cgc ttg gca atg ctc aga gcg ctt 206  
Leu Leu Arg Val Lys Ser Ser Glu Arg Leu Ala Met Leu Arg Ala Leu  
30 35 40

gca gga atg tgc ggt cac cgc gtc ctt cct ggc act ggt gct tct gcg 254  
Ala Gly Met Cys Gly His Arg Val Leu Pro Gly Thr Gly Ala Ser Ala  
45 50 55 60

ata gcg gca acg gta acc cca aag ggg gct tcg atg aag ctt aaa cca 302  
Ile Ala Ala Thr Val Thr Pro Lys Gly Ala Ser Met Lys Leu Lys Pro  
65 70 75

ccg cgt ccg cag tca acg aag tct ccg gag ctc agg gag ctg tca cgg 350

Pro	Arg	Pro	Gln	Ser	Thr	Lys	Ser	Pro	Glu	Leu	Arg	Glu	Leu	Ser	Arg	
80								85					90			
aag	att	cgc	gaa	atg	aat	aag	act	ata	agt	cag	gaa	tca	gct	cgg	gtt	398
Lys	Ile	Arg	Glu	Met	Asn	Lys	Thr	Ile	Ser	Gln	Glu	Ser	Ala	Arg	Val	
95								100					105			
aac	cac	cg	ttg	ccg	gaa	ggc	cac	cct	ctc	tta	gag	aag	cgg	gca	gaa	446
Asn	His	Arg	Leu	Pro	Glu	Gly	His	Pro	Leu	Leu	Glu	Lys	Arg	Ala	Glu	
110								115					120			
tat	ttt	cgt	cac	ctt	aga	tct	ctt	aag	agc	caa	gga	gtc	aat	aga	ctc	494
Tyr	Phe	Arg	His	Leu	Arg	Ser	Leu	Lys	Ser	Gln	Gly	Val	Asn	Arg	Leu	
125								130					135			140
atc	taa	gaaggcacta	cgttaggtacc	gtgcctctat	gaggaatacg	aaccgactag										550
Ile																
tgcacaatag	acgaccagtt	ctaccaaagg	tagagcctga	ctctaattcta	ccattcggcc											610
agcgacggag	tcgcatgaca	acgtggaatc	ttagaccacg	ccggacgggt	tatccgtcaa											670
atggtaacttt	ggcagttacg	gaactcctga	tctcgattta	tagatcaaac	ttctacacacct											730
tgaaggtgg	cgaggaaggg	agatgtacgt	gctgcaacac	ccataaggag	caagctttgc											790
tactcctatc	cggttacctc	cagctatatac	gtgcactgca	ctcagttgga	aggctctgtat											850
tcgtagaata	ctgcaaaacc	aggatatgcg	tcgaggcacg	cctcaccgg	ctacgtccga											910
gggtgaccct	aacgggctgc	tgaacttaggt	tcagccagcg	cttcctgtga	gtatgtcatt											970
ccgggtcctt	cggggccccgg	gccagtttcg	actggtgtag	gtttgcccta	ctagagtact											1030
tgcgacgccc	aagcgcctcc	gttcaaaaga	acgcgcgaagc	cctagcagag	aaatgcgagg											1090
gcatgactct	tcgagtcaaa	aaaaaaaaaa	aaaaaaaaaaac	tcgag												1135

<210> 2  
 <211> 141  
 <212> PRT  
 <213> Babesia canis

<400> 2  
 Met Glu Ser Thr Ser Thr Thr Asn Phe Val Ala Glu Asn Arg Pro  
 1 5 10 15

Thr Phe Gly Glu Thr Phe Asp Val Met Arg Glu Ala Leu Leu Arg Val  
20 25 30

Lys Ser Ser Glu Arg Leu Ala Met Leu Arg Ala Leu Ala Gly Met Cys  
35 40 45

Gly His Arg Val Leu Pro Gly Thr Gly Ala Ser Ala Ile Ala Ala Thr  
50 55 60

Val Thr Pro Lys Gly Ala Ser Met Lys Leu Lys Pro Pro Arg Pro Gln  
65 70 75 80

Ser Thr Lys Ser Pro Glu Leu Arg Glu Leu Ser Arg Lys Ile Arg Glu  
85 90 95

Met Asn Lys Thr Ile Ser Gln Glu Ser Ala Arg Val Asn His Arg Leu  
100 105 110

Pro Glu Gly His Pro Leu Leu Glu Lys Arg Ala Glu Tyr Phe Arg His  
115 120 125

Leu Arg Ser Leu Lys Ser Gln Gly Val Asn Arg Leu Ile  
130 135 140

<210> 3

<211> 1134

<212> DNA

<213> Babesia canis

<220>

<221> CDS

<222> (75)..(929)

<400> 3

gaattcggca cgagccctgc tatactgtgc tttgcaacta actccatcgt aataatttaa 60

tataataata aagg atg gag tcg aca tca aca acg acc aac ttt gtt gcc 110  
Met Glu Ser Thr Ser Thr Thr Asn Phe Val Ala  
1 5 10

gag aac cgt ccc acc ttt ggt gag acg ttt gat gtg atg agg gaa gct 158  
Glu Asn Arg Pro Thr Phe Gly Glu Thr Phe Asp Val Met Arg Glu Ala  
15 20 25

ttg ctt cgt gta aag tcc tct gaa cgc ttg gca atg ctc aga gcg ctt 206  
Leu Leu Arg Val Lys Ser Ser Glu Arg Leu Ala Met Leu Arg Ala Leu

30	35	40	
gca gga atg tgc ggt cac cgc gtc ctt cct ggc act ggt gct tct gcg Ala Gly Met Cys Gly His Arg Val Leu Pro Gly Thr Gly Ala Ser Ala	45	50	254
	55	60	
ata gcg gca acg gta acc cca aag ggg gct tcg atg aag ctt aaa cca Ile Ala Ala Thr Val Thr Pro Lys Gly Ala Ser Met Lys Leu Lys Pro	65	70	302
	75		
ccg cgt ccg cag tca acg aag tct ccg gag ctc agg gag ctg tca cgg Pro Arg Pro Gln Ser Thr Lys Ser Pro Glu Leu Arg Glu Leu Ser Arg	80	85	350
	90		
aag att cgc gaa atg aat aag act ata agt cag gaa tca gct cgg gta Lys Ile Arg Glu Met Asn Lys Thr Ile Ser Gln Glu Ser Ala Arg Val	95	100	398
	105		
aac cac cgg ttg ccg gaa ggc cac cct ctc tta gag aag cgg gca gaa Asn His Arg Leu Pro Glu Gly His Pro Leu Leu Glu Lys Arg Ala Glu	110	115	446
	120		
tat ttc gtc acc tta gat ctc tta aga gcc aag gag tca ata gac tca Tyr Phe Val Thr Leu Asp Leu Leu Arg Ala Lys Glu Ser Ile Asp Ser	125	130	494
	135	140	
tct aag aag gca cta cgt agg tac cgt gcc tct atg agg aat acg aac Ser Lys Lys Ala Leu Arg Arg Tyr Arg Ala Ser Met Arg Asn Thr Asn	145	150	542
	155		
cga cta gtg cac aat aga cga cca gtt cta cca aag gta gag cct gac Arg Leu Val His Asn Arg Arg Pro Val Leu Pro Lys Val Glu Pro Asp	160	165	590
	170		
tct aat cta cca ttc ggc cag cga cgg agt cgc atg aca acg tgg aat Ser Asn Leu Pro Phe Gly Gln Arg Arg Ser Arg Met Thr Thr Trp Asn	175	180	638
	185		
ctt aga cca cgc cgg acg ggt tat ccg tca aat ggt act ttg gca gtt Leu Arg Pro Arg Arg Thr Gly Tyr Pro Ser Asn Gly Thr Leu Ala Val	190	195	686
	200		
acg gaa ctc ctg atc tcg att tat aga tca aac ttc tac acc ttg aag Thr Glu Leu Leu Ile Ser Ile Tyr Arg Ser Asn Phe Tyr Thr Leu Lys	205	210	734
	215	220	
gtg gtc gag gaa ggg aga tgt acg tgc tgc aac acc cat aag gag caa Val Val Glu Glu Gly Arg Cys Thr Cys Cys Asn Thr His Lys Glu Gln			782

225	230	235	
gct ttg cta ctc cta tcc ggt tac ctc cag cta tat cgt gca ctg cac			830
Ala Leu Leu Leu Leu Ser Gly Tyr Leu Gln Leu Tyr Arg Ala Leu His			
240	245	250	
tca gtt gga agg tct gta ttc gta gaa tac tgc aaa acc agg ata tgc			878
Ser Val Gly Arg Ser Val Phe Val Glu Tyr Cys Lys Thr Arg Ile Cys			
255	260	265	
gtc gag gca cgc ctc acc gga cta cgt ccg agg gtg acc cta acg ggc			926
Val Glu Ala Arg Leu Thr Gly Leu Arg Pro Arg Val Thr Leu Thr Gly			
270	275	280	
tgc tgaacttaggt tcagccagcg cttcctgtga gtatgtcatt ccgggtcctt			979
Cys			
285			
cggggcccg gccagtttcg actggtagtag gttgcccta ctagagtact tgcgacgccc 1039			
aaggcctcc gttcaaaaaga acgcgcaagc cctagcagag aaatgcgagg gcatgactct 1099			
tcgagtcaaa aaaaaaaaaa aaaaaaaaaac tcgag			1134
<210> 4			
<211> 285			
<212> PRT			
<213> Babesia canis			
<400> 4			
Met Glu Ser Thr Ser Thr Thr Asn Phe Val Ala Glu Asn Arg Pro			
1	5	10	15
Thr Phe Gly Glu Thr Phe Asp Val Met Arg Glu Ala Leu Leu Arg Val			
20	25	30	
Lys Ser Ser Glu Arg Leu Ala Met Leu Arg Ala Leu Ala Gly Met Cys			
35	40	45	
Gly His Arg Val Leu Pro Gly Thr Gly Ala Ser Ala Ile Ala Ala Thr			
50	55	60	
Val Thr Pro Lys Gly Ala Ser Met Lys Leu Lys Pro Pro Arg Pro Gln			
65	70	75	80
Ser Thr Lys Ser Pro Glu Leu Arg Glu Leu Ser Arg Lys Ile Arg Glu			
85	90	95	

Met Asn Lys Thr Ile Ser Gln Glu Ser Ala Arg Val Asn His Arg Leu  
100 105 110

Pro Glu Gly His Pro Leu Leu Glu Lys Arg Ala Glu Tyr Phe Val Thr  
115 120 125

Leu Asp Leu Leu Arg Ala Lys Glu Ser Ile Asp Ser Ser Lys Lys Ala  
130 135 140

Leu Arg Arg Tyr Arg Ala Ser Met Arg Asn Thr Asn Arg Leu Val His  
145 150 155 160

Asn Arg Arg Pro Val Leu Pro Lys Val Glu Pro Asp Ser Asn Leu Pro  
165 170 175

Phe Gly Gln Arg Arg Ser Arg Met Thr Thr Trp Asn Leu Arg Pro Arg  
180 185 190

Arg Thr Gly Tyr Pro Ser Asn Gly Thr Leu Ala Val Thr Glu Leu Leu  
195 200 205

Ile Ser Ile Tyr Arg Ser Asn Phe Tyr Thr Leu Lys Val Val Glu Glu  
210 215 220

Gly Arg Cys Thr Cys Cys Asn Thr His Lys Glu Gln Ala Leu Leu Leu  
225 230 235 240

Leu Ser Gly Tyr Leu Gln Leu Tyr Arg Ala Leu His Ser Val Gly Arg  
245 250 255

Ser Val Phe Val Glu Tyr Cys Lys Thr Arg Ile Cys Val Glu Ala Arg  
260 265 270

Leu Thr Gly Leu Arg Pro Arg Val Thr Leu Thr Gly Cys  
275 280 285

<210> 5  
<211> 90  
<212> DNA  
<213> Babesia canis

<400> 5  
ggatcctaat acgactcact atagggagac caccatggag tcgacatcaa caacgaccaa 60  
ctttgttgc gagaaccgtc ccacctttgg 90

<210> 6  
<211> 24  
<212> DNA  
<213> Babesia canis

<400> 6  
gacgtttat gtgatgaggg aagc 24

<210> 7  
<211> 21  
<212> DNA  
<213> Babesia canis

<400> 7  
aatgacatac tcacaggaag c 21

<210> 8  
<211> 20  
<212> DNA  
<213> Babesia canis

<400> 8  
atgagtctat tgactccttg 20

<210> 9  
<211> 21  
<212> DNA  
<213> Babesia canis

<400> 9  
aggagagctgt cacggaagat t 21

<210> 10  
<211> 21  
<212> DNA  
<213> Babesia canis

<400> 10  
atgaggaatt cgaaccgact a 21